# PIZZUTO
# FIRE PROTECTION PLAN

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# FIRE PROTECTION PLAN
# For
# Pizzuto Subdivision
# Deer Springs Fire Protection District

## 1.0 GENERAL DESCRIPTION

The Pizzuto Subdivision is located within a declared High Fire Hazard Area in the rural area of Deer Springs Road, County of San Diego, California. Deer Springs Fire Protection District is the fire authority for the development. The California Department of Forestry and Fire Protection will provide contract fire protection for the Pizzuto Subdivision. The proposed project is to be a three (3) parcel gated residential area.

Pizzuto Subdivision will consist of three (3) parcels. Parcel 1 will be 16.67 net acres in size and is primarily located on the western boundary; Parcel 2 will be 7.77 acres in size and is located in the northeast corner of the subdivision and Parcel 3 will be 12.44 net acres in size and is located in the southeast corner.

Primary access into the subdivision is from Deer Springs Road via Deer Spring Place, a privately maintained road to the subdivision boundary. Deer Springs Place is a 24' wide road which generally runs north and south as it enters the subdivision. Proposed road realignment will take the road through the subject property and exit approximate mid-point of the eastern boundary. The driveway access to Parcel 1 is approximately 560 feet. The driveway access to Parcel 2 is approximately 320 feet and 560 feet for Parcel 3.

The area adjacent to the northern boundary is a partially developed rural area and contains a large area of open space with native vegetation, which is a high fire hazard area. The adjacent area to the west of the western boundary is also a partially developed area that is mostly open spaces with lighter fuel loadings; there is some irrigated slopes and vegetation. The adjacent areas to the south of the southern boundary again contain open spaces with native vegetation, at the bottom of the slopes there is scattered development along Deer Springs Road. The area adjacent to the eastern boundary is a maintained Avocado Grove. The entire area has limited fire equipment access due to the steep, rocky terrain and existing road grades of up to 18%.

**Photo 1: View looking to the northwest portions of the Pizzuto property. Photo taken at the approximate center of the property.**

A Fire Protection Plan (FPP) must be submitted to and approved by the Deer Springs Fire Protection District. The FPP assesses the overall (off-site and on-site) wildland fire hazards and risks that may threaten life and property associated with the three proposed homes in the Pizzuto Subdivision. In addition, the FPP establishes both the short-term and long-term fuel modification actions required to minimize any projected fire hazards, and assigns annual maintenance responsibilities for each of the required fuel modification actions.

## 1.1 General Information:

| | |
|---|---|
| Developer: | Carl and Silvia Pizzuto<br>773 Hillsboro Way<br>San Marcos, CA 92069 |
| Approving City Departments: | |
| Fire Authority: | Deer Springs Fire Protection District |
| Engineering: | San Diego County Planning Department |
| Water: | Vallecitos Water District |

**1.2 Coordination Between Supporting Plan:** The purpose of this FPP is to provide Fuel Modification Zone treatment direction for the developer, architects, builders, Deer Springs Fire Protection District and San Diego County Planning Officials and the Pizzuto Subdivision and individual lot owners to use in making all proposed structures on all lots in the subdivision safe from future wildland fires. This FPP includes:

- A wildland fire hazard-rating assessment and expected fire behavior of off-site and on-site native vegetative fuels;
- A long-term perimeter vegetative fuel modification treatment and maintenance plan to minimize any loss to the residential structures on all three parcels due to wildland fire;
- A long-term interior open space fuel modification treatment plan and "*Firewise landscaping*" criteria to be deployed around the planned structures on all lots.

This FPP is based upon requirements listed in Ordinance No. 9669, an ordinance amending Appendix II-a of the San Diego County Fire Code relating to wildland/urban interface standards, San Diego County Consolidated Fire Code, San Diego County Ordinance 9670 and 2001 California Fire Code, California Code of Regulations Title 24, Part 9, which is based upon the 2000 Uniform Fire Code, Article 86 – Fire Protection Plan – Wildland Interface (UWI) Areas, Section 8601.

## 2.0 WILDLAND FIRE HAZARD AND RISK ASSESSMENT

When assessing the wildland fire hazard it is necessary to consider the plant succession and the climax plant communities. The vegetation described below form the most likely climax plant communities that will exist without human intervention and the one utilized for planning purposes.

**2.1 Off-site Fire Hazard and Risk Assessment:** The Pizzuto Subdivision is located in a hilly zone approximately two miles west of Interstate 15 and .25 - .50 miles north of Deer Springs Road. All exterior boundaries abut areas with some degree of development; the development may be in the means of a healthy and irrigated Avocado Grove or distant structures with either designated or non-designated open space. These areas of open space are vegetated with native and non-native annual grasses and chamise (approximately four to eight feet in height), black sage, common buckwheat, ceanothus, mountain mahogany, laurel sumac and scattered manzanita. As is typical of chaparral plants, a high percentage of the plants have an abundance of dead material. This is especially true of the black sage, buckwheat and sumac plants. This is due to the effects of the local Mediterranean climate where warm wet winters promote lots of new growth, and long, hot and very dry summer seasons sometimes occur. Occasionally, multi-year droughts cause significant parts of these plants to die back. All of these plants are adapted to the intense wildland fires that they need for species regeneration. However, if wildland fire occurs at too frequent intervals, the scrub group plant community reverts to a more flammable, less desirable community of short lived annual grasses with little wildlife value and poor ability to protect the soil.

The mixed chaparral community has functioned unimpeded in this Mediterranean climate for thousands of years, with both plants and animals thriving and adapting to the wind driven wildland fires that burn through the coastal plains every 20 to 30 years. Today this world-renowned climate

draws thousands of newcomers to southern California each year, and particularly to San Diego County. In the endless search for new home sites, more new homes are being built in the chaparral plant community (**the wildland/urban interface**) where fire will also continue to be a visitor on both a planned and unplanned basis.

***The goal of the FPP is to prevent the loss of lives, homes and personal property when wildland fires do occur with the challenge of allowing the development of well planned home sites interspersed with fully functioning mixed chaparral habitats. This goal is accomplished by requiring communities to be built with fire resistant materials and properly designed and maintained fuel modification treatments that will safely mitigate the High fire Hazard.***

**2.2 On-site Fire Hazard and Risk Assessment:** With regard to the Pizzuto Subdivision, interior open space areas are vegetated with annual grasses, chamise, buckwheat, blue blossom, laurel sumac and scattered sage that will pose extreme fire hazards annually as the plants cure or lose live fuel moisture during hot, dry summer seasons. Biological open spaces found adjacent to the development are environmentally protected areas. These areas can contribute to a damaging wildland fire event if not properly managed.

In summary, any wind or topography driven wildland fire burning under a north and northeastern (*Santa Ana*) wind pattern through the adjacent open space to the north and northeast creates an **extreme** wildland fire hazard to the structures in all three (3) parcels. Wildland fires starting north of the development on a typical fire day with a southwest wind will burn away from the proposed structures and will generally not be a significant wildland fire hazard. However, a fire starting south and southwest of the development on a typical summer day with a southwest wind will create a **high** wildland fire hazard to structures in all three (3) parcels. All residential structures are threatened through wind blown embers regardless of the wind direction. The installation of Enhanced Fire Resistive Construction will mitigate against wind blown ember threat.

**Photo 2: View to the west northwest at the location of Parcel 1. Dirt road will be incorporated as part of the driveway to residence.**

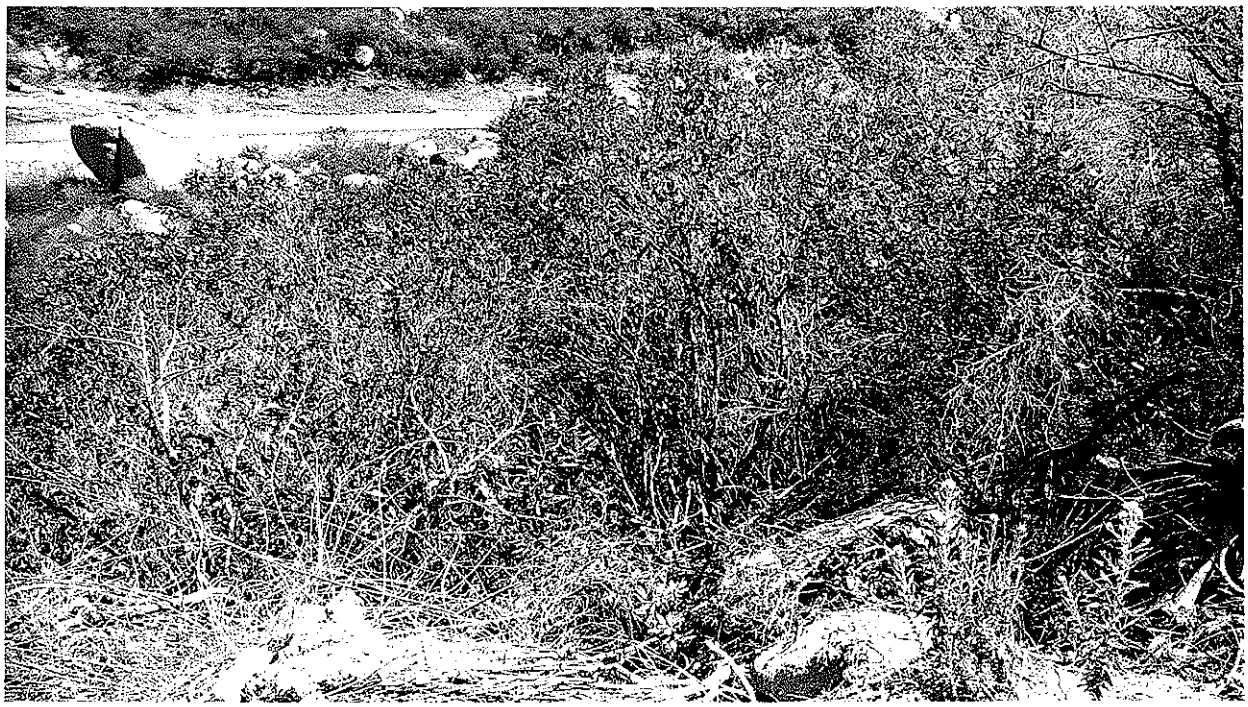

**Photo 3: Downslope view from top of Parcel 1 depicting typical vegetation on south aspect slope.**

**Photo 4: Upslope view from bottom of Parcel 1 depicting typical vegetation on south aspect slope.**

**Photo 5: View to the south at road in upper center of photo that separates Parcel 2 (left of road) and Parcel 3 (right of road).**

**Photo 6: View from Parcel 1 looking at general area of Parcel 2. Parcel 2 is between road and Avocado grove. Avocado grove is a healthy and irrigated grove.**

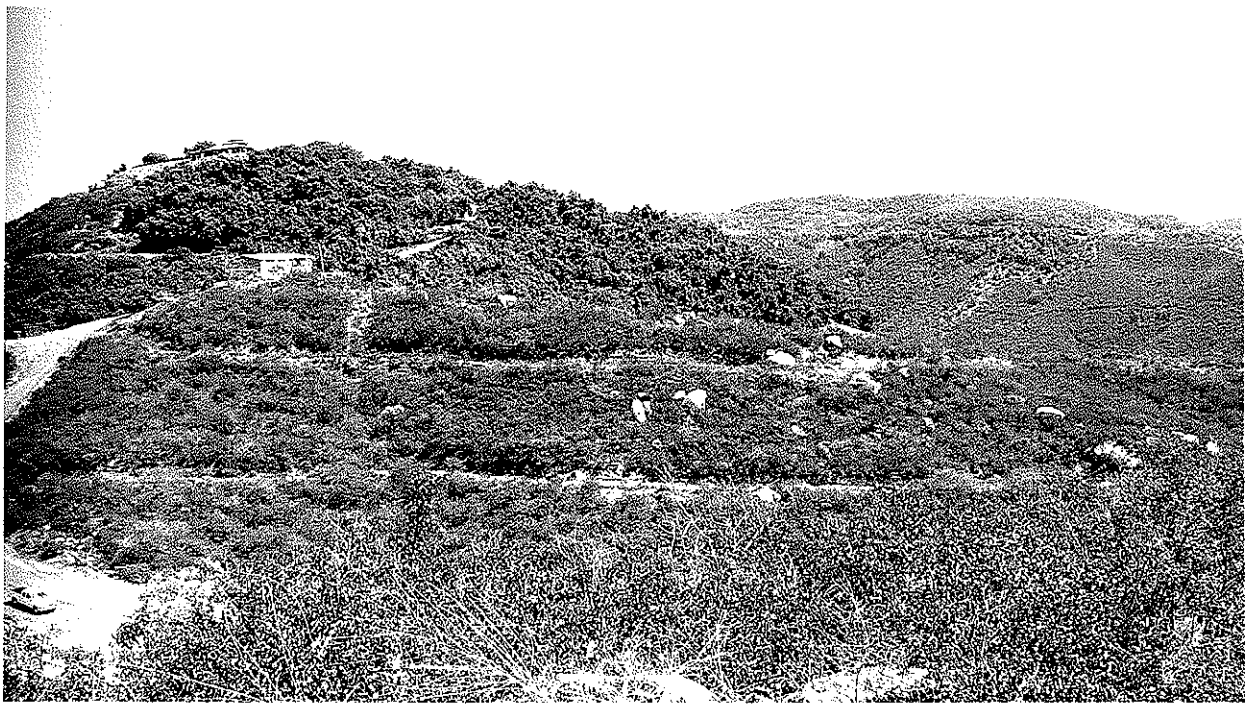

**Photo 7: View from Parcel 1 looking at general area of Parcel 3. Parcel 3 is to the right of the road and is adjacent to a healthy and irrigated Avocado grove on the south.**

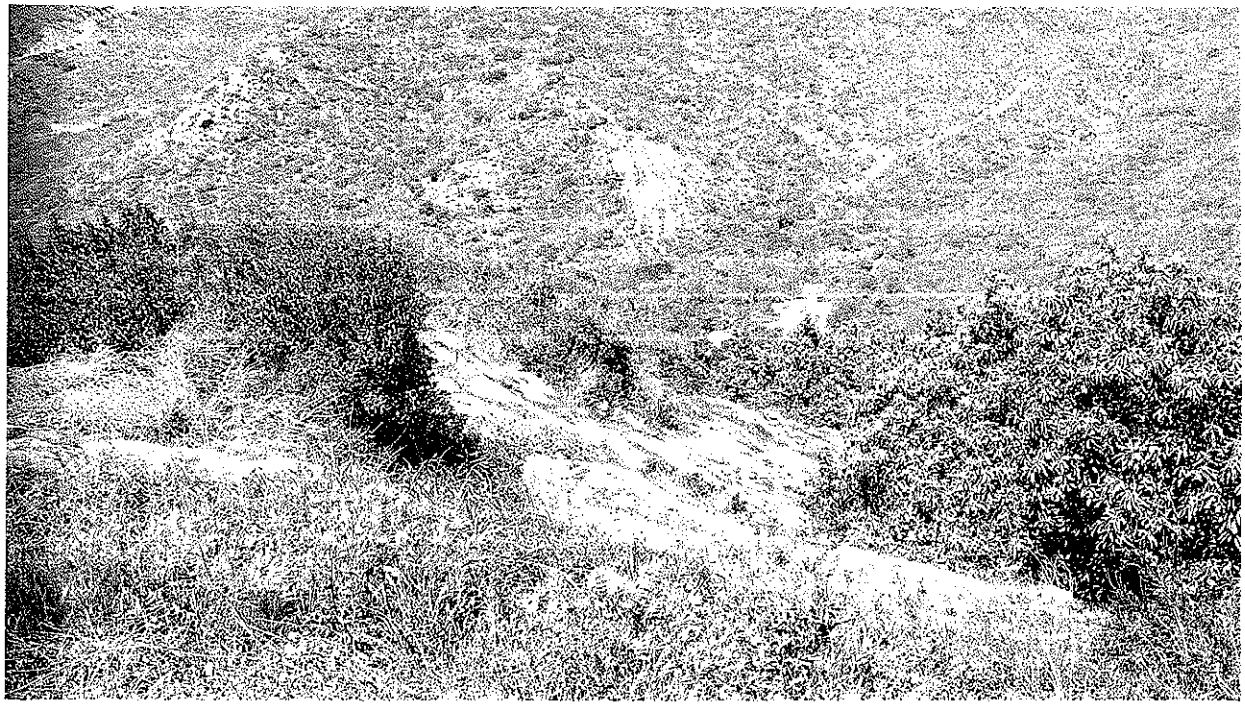

**Photo 8: Depicts typical vegetation in the east portion of Parcel 2. Bare ground is property boundary with Avocado grove on neighboring property.**

**Photo 9: Depicts typical vegetation in the south and west portions of Parcel 3.**

**2.3 Predicting Wildland Fire Behavior:** The BEHAVE Plus 3.0.1: fire Behavior Prediction and Fuel Modeling System developed by USDA-Forest Service research scientists Patricia L. Andrews and Collin D. Bevins at the Intermountain Forest Fire Laboratory, Missoula, Montana, is one of the best systematic methods for predicting wildland fire behavior. The BEHAVE Plus fire behavior computer modeling system was, and is utilized by wildland fire experts nationwide (refer to APPENDIX "E").

Wildland fire managers use the BEHAVE Plus modeling system to project the expected fire intensity, rate-of-spread and flame lenghts with a reasonable degree of certainty for use in Fire Protection Planning purposes. ***FIREWISE* 2000, Inc.** used the BEHAVE Plus 3.0.1 Fire Behavior Prediction Model to make the following fire behavior assessments for the Pizzuto Subdivision.

**2.3.1 Wildland Fire Behavior Calculations for the off-site hazardous vegetative fuels:** Wildland fire behavior calculations have been projected for the hazardous vegetative fuels on the undeveloped areas in proximity to planned structures within all three (3) parcels of the Pizzuto Subdivision. The projections are based on scenarios that are "worst case" San Diego County fire weather assumptions. The scenarios are depicted in Tables 2.2.1 thru 2.2.4. The tables display the expected Rate of Fire Spread (expressed in feet per minute), Fireline Intensity (expressed in British Thermal Units per foot per second) and Flame Length (expressed in feet) for four (4) separate BEHAVE PLUS–Fire Behavior Prediction and Fuel Modeling System Computer Calculations. The tables also include the calculation inputs used in the BEHAVE PLUS program which were obtained from the Pizzuto Subdivision site observations and fuel levels typically observed during the local fire season.

The areas of open space are vegetated with native and non-native annual grasses and chamise (approximately 4-6 feet in height), black sage, common buckwheat, ceanothus, mountain mahogany, laurel sumac, coastal oak and scattered manzanita. Two (2) Fire Behavior Fuel Models have been selected to represent the vegetation: Fuel Model 4 (FM-4) and a Southern California specific Fuel Model, SCAL-18.

FM-4 represents native and non-native annual grasses and chamise (approximately 4-6 feet in height), ceanothus, mountain mahogany, laurel sumac, coastal oak and scattered manzanita, and will be for the fire hazard areas north and northeast of the planned construction.

SCAL-18 represents fuels on the west, southwest and southern areas and consist of native and non-native annual grasses, black sage (all sages) and common buckwheat.

***Fire Scenario #1: Late Fire Season With Late Season North, Northeast And East Wind (Santa Ana Wind) Conditions Along Northeast & North Project Boundary***

**Table 2.2.1**
**Fire Scenario #1**
**Expected Fire Behavior For Late Season 60 MPH Santa Ana Wind Condition Fire Burning in a Fuel Model 4 (mixed chaparral)**

| | |
|---|---|
| **Rate of Spread** | **2867 feet/minute** |
| **Fireline Intensity** | **164867 BTU's/foot/second** |
| **Flame Length** | **113 feet in length** |

**Fire Behavior Calculation Input Data:**

- **100 percent up slope**
- **60 mph 20-foot wind speed (36 mph mid-flame wind speed)**
- **0° direction of wind vector to slope**

**Anticipated Fuel Moistures**

- *** 1-Hour Fine Fuel Moisture of .....2%**
- *** 10-Hour Fuel Moisture of.....3%**
- *** 100-Hour Fuel Moisture of ..... 5%**
- *** Live Herbaceous Fuel Moisture of.....30%**
- *** Live Woody Fuel Moisture of.....50%**

Table 2.2.2 which follows shows the change in fire rate of spread, intensity and flame length following the completion of the *Firewise* required fuel modification work. The table displays the results of using two different fuel models. FM-1 is a perennial native grass stand one (1) foot tall. FM-9 is hardwoods with litter and maintaining the overstory 6-8 feet tall. Native grasses must be removed from beneath the shrubs to eliminate vertical fuel ladders. Treatment is typically completed in May or June each year or as required by Deer Springs Fire District.

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***Fire Scenario #2: Late Fire Season With Late Season North, Northeast And East Wind (Santa Ana Wind) Conditions Along Northeast & East Project Boundaries.***

| Table 2.2.2<br>Expected Fire Behavior For For A Late Season 60 MPH Santa Ana Wind Condition In Fuels Modified To a Zone 2 Criteria [Combined Fuel Model (Fuel Model 1 – Native Grasses 80% and Fuel Model 9 – Hardwoods with litter (20%)]. | |
|---|---|
| Rate of Spread | 732 feet/minute |
| Fireline Intensity | 1415 BTU's/foot/second |
| Flame Length | 12.7 feet in length |
| Fire Behavior Calculation Input Data:<br>• 100 percent up slope<br>• 60 mph 20-foot wind speed (24 mph mid-flame wind speed)<br>• 0° direction of wind vector to uphill slope<br>Anticipated Fuel Moistures<br>* 1-Hour Fine Fuel Moisture of .....2%<br>* 10-Hour Fuel Moisture of.....3%<br>* 100-Hour Fuel Moisture of .....5%<br>* Live Herbaceous Fuel Moisture of.....30%<br>* Live Woody Fuel Moisture of.....50% | |

***Fire Scenario #3: Typical Fire Season Day With Above Average Southwest Prevailing Wind Conditions Along West or South Project Boundary.***

| Table 2.2.3<br>Fire Scenario #3<br>Expected Fire Behavior For Above Average 30 MPH Southwest Prevailing Wind Condition Fire Burning in a Southern California specific Fuel Model SCAL18 | |
|---|---|
| Rate of Spread | 237.9 feet/minute |
| Fireline Intensity | 17279 BTU's/foot/second |
| Flame Length | 40.0 feet in length |
| Fire Behavior Calculation Input Data:<br>• 100 percent up slope<br>• 30 mph 20-foot wind speed (12 mph mid-flame wind speed)<br>• 0° direction of wind vector to uphill slope<br>Anticipated Fuel Moistures<br>* 1-Hour Fine Fuel Moisture of .....2%<br>* 10-Hour Fuel Moisture of.....3%<br>* 100-Hour Fuel Moisture of ..... 5%<br>* Live Herbaceous Fuel Moisture of.....30%<br>* Live Woody Fuel Moisture of.....50% | |

***Fire Scenario #4: Typical Late Fire Season Day With Topography Driven Fire During Fire Season With Average South, Southwest or West Prevailing Wind Conditions Along Southwest Project Boundary in a non-irrigated thinned fuel model to Zone 2A requirement.***

| Table 2.2.4<br>Fire Scenario #4<br>Expected Fire Behavior For Topography Driven Fire at the Southwest Project Boundary With Average 30 MPH Southwest Prevailing Wind Conditions in a Combined Fuel Model (Fuel Model 1 – Native Grasses (80%) and Fuel Model 9 – Hardwoods with litter (20%)). | |
|---|---|
| **Rate of Spread** | **145 feet/minute** |
| **Fireline Intensity** | **1181 BTU's/foot/second** |
| **Flame Length** | **11.7 feet in length** |
| **Fire Behavior Calculation Input Data:**<br>• **100 percent up slope**<br>• **15 mph 20-foot wind speed (6 mph mid-flame wind speed)**<br>• **0° direction of wind vector to uphill slope**<br>**Anticipated Fuel Moistures**<br>*** 1-Hour Fine Fuel Moisture of .....2%**<br>*** 10-Hour Fuel Moisture of.....3%**<br>*** 100-Hour Fuel Moisture of ..... 5%**<br>*** Live Herbaceous Fuel Moisture of.....30%**<br>*** Live Woody Fuel Moisture of.....50%** | |

Table 2.2.4 above simulates the change in fire rate of spread, intensity and flame length following the completion of required fuel modification work. The table displays the results of fuel Model 9. Fuel Model 9 is a hardwood with litter plant community with a combined total of 3.5 tons of 1hr, 10hr and 100hr fine fuel loading per acre.

Native grasses must be removed from beneath the shrubs to eliminate vertical fuel ladders. Treatment is typically completed in May or June of each year and the dead material is pruned out of the native mixed chaparral plants or as required by Deer Springs Fire Protection District.

Tables 2.2.5C and 2.2.5D show the change in fire rate of spread, intensity and flame length following the completion of the required fuel modification work. Fire behavior reductions from a Fuel Model 4 dense, Mixed Chaparral fuels (as depicted in Table 2.2.5A) and the Southern California specific SCAL18, Sages with Buckwheat and grasses (as depicted in Table 2.2.5B) to Treated Thinning Zone 2 (Simulated combined Fuel Model 9-Hardwoods with litter and Fuel Model 1-Grasses) depicted in Table 2.2.5C and 2.2.5D are:

## SUMMARY FIRE BEHAVIOR TABLES:

**TABLE 2.2.5A – 60-mph Northeast Wind**

| Prior to Fuel Treatment | | | After Fuel Treatment | |
|---|---|---|---|---|
| Rate of Spread | 2867 Ft/min | | Rate of Spread | 732 ft/min |
| Fireline Intensity | 164867 BTU/ft/sec | VS. | Fireline Intensity | 1415 BTU/ft/sec |
| Flame Length | **113.0 Feet** | | Flame Length | **12.7 Feet** |

**TABLE 2.2.5C - 60-mph Northeast Wind**

**TABLE 2.2.5B – 30-mph Southwest Wind**

| Prior to Fuel Treatment | | | After Fuel Treatment | |
|---|---|---|---|---|
| Rate of Spread | 237.9 Ft/min | | Rate of Spread | 145 ft/min |
| Fireline Intensity | 17279 BTU/ft/sec | VS. | Fireline Intensity | 1181 BTU/ft/sec |
| Flame Length | **40.0 Feet** | | Flame Length | **11.7 Feet** |

**TABLE 2.2.5D – 30-mph Southwest Wind**

## 3.0 ASSESSING STRUCTURE IGINITION IN THE WILDLAND/URBAN INTERFACE

Structure ignitions from wildland fire basically come from two sources of heat: convective firebrands (flying embers) and radiant heat. During periods of high fire intensity and strong, dry, winds convective firebrands have the capability of being transported over great distances. The BEHAVE Plus Fire Behavior Program does not address wind blown embers or firebrands. However, even though enhanced fire-resistive exterior building materials will be used in the construction of structures, wind driven embers and radiant heat issues will be addressed in this FPP.

***This statement is made with the understanding that the homeowner will be required to maintain the property to Zone 1, Zone 2 and Zone 3 fuel modification standards and will keep the roof and any rain gutters free of leaves, needles and other combustible debris and all firewood and other combustible materials will be properly stored away from the structure so that burning embers falling on or near the structure have no suitable host. Pizzuto Subdivision individual lot owners will be responsible for maintaining their own educational program to keep all doors and windows tightly closed whenever a wildland fire is reported in the near vicinity.***

"*Firewise*" landscaping is the act of converting native vegetation from a highly flammable and high intensity state to a more fire resistant and lower intensity condition. The comparisons of the untreated fuels in Tables 2.2.1 and 2.2.2 with Table 2.2.3 and Table 2.2.4 ("*Firewise*" Landscaping) demonstrate how "*Firewise*" landscaping substantially reduces flame lengths and fireline intensity to an acceptable level for home protection. Other than non-combustible roofing and exterior building materials, "*Firewise*" landscaping has proven to be the most effective treatment for minimizing structure losses due to wildland fire radiant heat.

A USDA-Forest Service research study entitled the "Structure Ignition Assessment Model (SIAM)" by Jack D. Cohen, Intermountain Fire Science Laboratory, Missoula, Montana has helped to validate how much distance is required to keep structures from igniting due to wildland fire radiant heat. Preliminary SIAM results suggest that for reducing structure ignitions from radiant heat, vegetation modification beyond 100 feet distance from a structure has no significant benefit unless there is supporting data justifying more than 100 feet of vegetation modification. In this case, fuel modification measures up to 100 feet are more than adequate to protect the homes on lots adjacent to

native vegetation. Based on a quote from the Fire Marshal, Fire Services Coordinator Building Division, it has been determined that the Department of Planning and Land Use, County Fire Marshal does not support this contention, based on their experience in wildland fires in the County.

The SIAM Ignition Study indications and the personal experience of the ***FIREWISE* 2000, Inc.** evaluation team helped establish the fuel modification recommendations found in Section 5.0: Fuel Modification Definition, Required Landscaping and Required Maintenance & Fuel Treatment Location Map.

**3.1 Fire Resistant Plant Palatte:** Wildland fire research has shown over and over that some types of plants, including many natives, are more fire resistant than others. The County of San Diego's Recommended Plant List in APPENDIX "A" includes a listing of these low fuel volume, non-oily, non-resinous plants commonly refered to as "Fire Resistant". This term comes with the proviso that each year these plants are pruned, all dead wood is removed and all grasses or other plant material are removed from beneath the circumference of their canopies.

The recommended plant list in APPENDIX "A" includes native species occurring on the Pizzuto Subdivision property that are not considered undesirable from either a biological or wildland fire risk management perspective provided they are properly maintained year round.

## 4.0 FIRE DEPARTMENT RESPONSE TIME

The Pizzuto Subdivision is within the response area of the Deer Springs Fire Protection District. The nearest fire station, Fire Station 2 at 1321 Mesa Rock Rd., is approximately two miles from the gated entrance and an additional .5 miles from the planned homes (2.5 miles total), is less than five minutes travel time away. Despite the relatively close proximity of the nearest fire station, there is absolutely no assurance that the Engine Company will be in its station when a wildland fire might threaten the Pizzuto Subdivision from an ignition outside the development. With the implementation of the fuel modification and enhanced construction measures described in this FPP, the Pizzuto Subdivision will be provided with a higher degree of protection from wildland fire than many other communities and structures existing in the North County area.

## 5.0 FUEL MODIFICATION DESCRIPTIONS, REQUIRED TREATMENTS and FUEL TREATMENT LOCATION MAP

**5.1 Fuel Modification Descriptions.** All distances are measured horizontally. Three (3) fuel modification distances, referred to Fuel Modification Zones, are required: Zone 1 is 50 feet, Zone 2 is 50 feet and Zone 3 is 100 feet. Fuel Modification Zones 1 and 2 are required on all sides of the structures and along access roads and driveways. Fuel Modification Zone 3 is required only on the North, Northeast and Northwest sides of the structures, this will provided added protection from a Santa Ana wind driven fire. The distances are depicted on the Fuel Treatment Location Map included herein as Exhibit A. Prior to the delivery of any flammable building materials (e.g. lumber drop) on any building site within Pizzuto Subdivision, the fuel modification buffer surrounding the building site shall be in place including roadway and driveway clearances, and accepted by the Deer Springs Fire Protection District Fire Marshal.

**5.1.1 Fuel Modification Zone 1 -** *(Shown as Blue on the Fuel Treatment Location Map)*

**Defined:** Zone 1 is the area around and immediately adjacent to each and every home/structure and is a minimum distance of the first 50 feet. The measurement begins at the outer edge of any habitable structure; balconies, decks and gazebos are considered as a habitable structure. Zone 1 is commonly called the defensible space zone. It is an irrigated zone and shall be free of all combustible construction and materials.

**Required Landscaping:** Landscaping in all Zone 1 areas shall be cleared of all flammable vegetation; no more than 10% of native vegetation should be retained. Zone 1 will be irrigated and planted with a fire resistant plant palette taken from the list shown in Appendix "A", consisting of a mixture of green lawn and bedding plants maintaned, fire resistant native or ornamental planting less than 18 inches in height, and may contain occasional fire resistant trees. Trees will be placed and maintained so that their crown cover at maturity will be more than ten (10) feet from any structure. All tree crowns will be separated by twenty (20) feet and each tree will be limbed to maintain a separation of six feet between the ground fuels (shrubs and ground covers) and the lower limbs. In addition, single, well-spaced ornamental shrubs up to 48 inches in height, located no closer that five feet from the structure are allowed provided these plants will not carry fire to the sturcture. This plant palette is applicable to every home within Pizzuto Subdivision.

***Plants in Zone 1 shall not include any pyrophytes that are high in oils and resins such as pines, eucalyptus, cedar, cypress or juniper species or retain an abundance of dead plant material such as fan palms and pepper trees.***

**Required Maintenance**: All Zone 1 areas shall be maintained by the individual lot owner within the Pizzuto Subdivision. If water for irrigation is limited, use more of the available water in Zone 1 rather than in Zone 2 or Zone 3. Plants with high moisture content are less likely to burn. Non-flammable concrete patios, driveways, swimming pools, walkways, boulders, rock, and gravel can be used to break up fuel continuity within Zone 1.

**Construction Standards:** All structures in Zone 1 shall be constructed with Enhanced Fire Resistive construction as stated below in Section 5.3 of this Fire Protection Plan and as per County of San Diego Fire Code, San Diego County Building Code and Deer Springs FPD Ordinance 2002-01.

**5.1.2 Fuel Modification Zone 2 -** *(Shown as Green on the Fuel Treatment Location Map)*

**Defined:** Zone 2 is a distance of 50 and begins at the outer edge of Zone 1; it is the area from 50 to 100 feet from the residential structures. It is permanently irrigated and includes all natural and manufactured slopes. Irrigation shall not be required for natural slopes when there is a danger of slope failure. In such cases, alternative maintenance measures shall be developed and approved by the Deer Springs FPD. Alternatives may include removal of above ground vegetation, and planting with drought tolerant native grasses maintained to an 8" height.

**Required Landscaping:** All native plants shall be removed. Zone 2 shall be permanently irrigated and landscaped with a plant palette of low growing (less than 18 inches in height, which is needed to control erosion on steep slopes), low fuel volume plant material from a list in Appendix "A". No trees allowed in Zone 2 except native trees that are maintained per DSFPD Weed Abatement Ordinance 2002-03. Open areas resulting from plant removal (root system to be left intact) will be hydro-seeded

to a mix of native annual and perennial grasses, these grasses will be allowed to grow and produce seed during the winter and spring. As the grasses begin to cure (dry out) they will be cut to a 4 inch height as needed and by May 1 of each year or as required by DSFPD.

**Required Maintenance**: All Zone 2 areas shall be maintained by the individual lot owner within the Pizzuto Subdivision. Year-around maintenance of Zone 2 shall be required.

The ground cover, native plants and grasses shall be weed whipped and maintained at a height of four inches. All of the dead material must be cut at the soil line and pruned out on an as-needed basis, but at least annually each spring.

The following native species will not be permitted to regrow on manufactured slopes or in the natural areas that are part of the fuel modification plan: Chamise (*Adenostoma faeiculatum*); California sagebrush, (*Artemisia californica)*; flat-topped buckwheat, (*Eriogonum fasciculatum)*; and black sage, (*Salvia mellifera).*

**Other Information:** No combustible material storage is allowed in Zone 2.

**5.1.3 Fuel Modification Zone 3** - *(Shown as Yellow on the Fuel Treatment Location Map)*

**Defined:** Zone 3 is the next 100 feet, the area from 100 to 200 feet from the residential structures on the north, northwest and northeast sides (the sides affected by a Santa Ana wind event) of the inidividual homes. Zone 3 is not required for areas outside of Zone 2 on the south, southwest and southeast sides (away from the Santa Ana winds) of the individual homes. Irrigation of Zone 3 is not required.

**Required Landscaping:** The following invasive and fire-prone native and exotic species are to be removed from Zone 3 and will not be permitted to regrow on manufactured or natural slopes that are part of the fuel modification plan:

| Botanic Name | Common Name |
|---|---|
| Adenostoma fasciculatum | Chamise |
| Adensotma sparsifolium | Red shank |
| Artemisia californica | California Sagebrush |
| Brassica nigra | Black mustard |
| Brassica ropa | Yellow mustard, field mustard, wild turnip |
| Eriogonum fasciculatum | Common Buckwheat |
| Nicotiana bigelevil | Indian tobacco |
| Nicotiana glauca | Tree tobacco |
| Salsola tragus | Tumble weed, Russian thistle |
| Salvia mellifera | Black Sage |
| Salvia opiana | White Sage |

The following ornamentals shall not be planted or allowed to become established within Zone 3 unless otherwise noted in the approved plant list in Appendix "A":

The following ornamentals shall not be planted or allowed to become established within Zone 3 unless otherwise noted in the approved plant list in Appendix "A":

| **Botanic Name** | **Common Name** |
|---|---|
| Cortaderia selloana | Pampas Grass |
| Cupressus spp. | Cypress |
| Eucalyptus spp. | Eucalyptus |
| Juniperus spp. | Juniper |
| Pinus spp. | Pines |

**Required Maintenance:** All remaining native plants shall be maintained to a height of up to 18" and the native trees and aborescent native shrub species, (such as oaks, Mexican elderberry, toyon, mission manzanita, and laurel sumac that are over six feet in height and can be formed as mature trees) shall be trimmed up 6 feet from the ground. Trees must be separated by at least 1 ½ times the fully developed height of the retained tree canopies. All dead material must be pruned out on an as-needed basis, but at least annually each spring. Native, natural recruitment for additional or replacement of existing trees, shall be of indigeous species to this region and approved by the Deer Springs Fire Protection District.

The ground cover, native plants and grasses, *below the tree canopies* shall be weed whipped and maintained to a height of four inches. Open areas resulting from plant removal (root system to be left intact) will be hydroseeded with a mix of native annual and perennial grasses. These grasses will be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they will be cut to 18 inches or less.

**Other Information:** Specific to Parcels #2 and #3, the total of 200' fuel modification requirements on the north and east sides of the structure cannot be met due to limitatons caused by property boundaries, however, on the east side of these lots is a healthy and maintained grove of Avocado trees. The Avocado grove is an acceptable fuel modification that will prevent or reduce the threat of oncoming wildland fire. As long as this grove remains healthy and maintained there is no requirement for additional fuel modification zones.

**5.2 Zone Markers:** ***All exteriors boundaries of Fuel Modification Zones 2 and 3 shall be permanently marked on the ground*** for the purpose of guiding annual fuel management maintenance operations. The most reliable markers are steel fence posts with a baked on painted finish. The upper half of the above ground portion of the fence post is then either painted white, or a bright "day glo" orange to improve visibility. These Fuel Treatment Zone markers must be spaced so that the markers on each side of an installed marker can be seen from that marker.

**5.3 Basic And Enhanced Fire-Resistive Construction Requirements For All Structures:** All residential structures will be designed and constructed with both "basic" and "enhanced" fire resistant construction and design features as per the San Diego County Building Code (Ordinance 9670), San Diego County Fire Code (Ordinance 9669), and Deer Springs Fire Protection District Ordinance 2002-01. For a description of these construction requirements see APPENDIX "F".

All combustible building materials, decks, balconies, patio, covers, gasebos and fences will be permanently prohibited in Zones 1, 2 and 3. These structures may be allowed if constructed with Fire Resistive materials as per the San Diego County Fire Code and the San Diego Consolidated Fire Code.

CC&R's will record the above restrictions for combustible structures. Refer to Appendix "D" for photos and descriptions of non-combustible decks, patio covers and railings.

**5.4 Roadway and Driveway Clearances – Lot Owner Maintained Required Maintenance:**
Clearance of Brush or Vegetative Growth from Roadways: roadways and private roads shall have all vegetation removed to a minimum of 20 feet on each side of the improved width of the roadway or driveway and shall comply with the requirements of Fuel Modification Zone 2 criteria. Year round maintenance shall be required.

## 6.0 Infrastructure

**6.1 Water Supply:** Pizzuto Subdivision water supply will be attached to the Vallecitos Water District water system. Hydrants, mains and water pressures have been designed to comply with County of San Diego Code requirements. Please refer to Civil Engineering Design Plans.

**6.2 Access Roads:** All streets and cul-de-sacs have been designed to County of San Diego standards. (Refer to Civil Engineering Design Plans). The Pizzuto Subdivision will be a gated community. Gate locks shall be reviewed prior to their installation. An approved DSFPD access system shall be installed on all locked gates. Manually operated gates and barriers shall have DSFPD approved padlocks or Knox key boxes ("Knox" key switch with dust cover, "Knox" padlock, or "Knox" weather resistant lock box, for use with a Knox sub-master key). Upon activation of the key switch, the gates (egress and ingress) shall open and remain open until returned to normal operation by means of the key switch.

The "Knox" key switch for both manual and transmitter-operated gates shall be placed 48" above the roadway surface at the right side of the access gate within two feet of the edge of the roadway. The key switch shall be readily visible and unobstructed. The "Knox" box must be placed in a conspicuous location and clearly labeled with a permanent red sign with not less than ½" contrasting letters reading "FIRE DEPT" or with a "Knox" decal.

## 7.0 Homeowner Education

Each homeowner, by reviewing this Fuel Protection Plan, shall be aware of the herein described fire protection measures, the types of non-combustible construction, and the plant materials that are allowed within their lot boundary. A copy of this plan shall be provided to each homebuyer or resident. Of particular importance are APPENDICES "A", "B", and "D" of this plan. This provides guidance in the types of plants that are allowed to be established in landscaped areas and appropriate construction within fuel modification zones. Plant selection is critical as embers often travel over a mile during Santa Ana wind events.

**8.0 Mandated Inclusions in the Pizzuto Subdivision Covenant and Agreement**

The Pizzuto Subdivision CC & R's shall include the following statements:

1) Each lot owner is personally responsible for all Irrigated Zone 1 "firewise" landscaping fuel treatment measures and Thinning Zone 2 within their property as per the Deer Springs Fire Protection District.

2) The Deer Springs Fire Protection District will hold each lot owner within the Pizzuto Subdivision accountable for enforcement of all wildland fire protection issues discussed in this plan.

3) Each lot owner shall not allow **TRASH DUMPING OR DISPOSAL OF YARD TRIMMINGS IN THE FUEL TREATMENT ZONES.**

4) All landscaping plans, including additional structures, must be reviewed and approved under the guidance and approval of the Deer Springs Fire Protection District.

5) The Deer Springs fire Protection District has the authority for enforcing fuel treatment measures on any privately owned lot.

6) The Deer Springs Fire Protection District or its designated representative shall decide any disputes related to individual lot landscaping or fuel treatment, with respect to interpretation of the Pizzuto Subdivision Fire Protection Plan. Decisions shall be final and binding on the lot owner.

7) Should modifications to the Tentative Map Plans occur, any and/or all of the Fire Protection Plan may be revised at the discretion of Deer Springs Fire Protection District.

**9.0 Fuel Modification Zone Map:**

Attached is a folder containing the FUEL MODIFICATION ZONE MAP depicting the location of all proposed fuel modification treatment locations on and adjacent to all lots.

**APPENDICES:**

| | |
|---|---|
| **Plant Lists** | **Appendix A** |
| **Literature Referenced** | **Appendix B** |
| **Non-combustible & Fire Resistant Building Materials** | **Appendix C** |
| **BEHAVE Fire Prediction System** | **Appendix D** |
| **Basic Fire-Resistive Construction Requirements** | **Appendix F** |

**END**

# Appendix A

## Invasive, Suggested & Undesirable Plant Lists

## INVASIVE PLANT LIST

The following species are considered invasive (i.e., those capable of reproducing and spreading into native, non-irrigated areas and displacing those communities). Non-native plant species are prohibited in all areas adjacent to open space lands. Noxious weeds that have been introduced to San Diego County over the years tend to be more widespread and therefore more difficult to contain. The plants listed below have been identified as invasive and/or as noxious weeds and should not be planted or allowed to sprout in any transitional landscapes (landscapes planted with non-native species next to undeveloped areas).

| BOTANICAL NAME | COMMON NAME |
|---|---|
| *Ailanthus altissima* | Tree of Heaven |
| *Anthemis cotula**** | Mayweed, Stinking Chamolile |
| *Arctotheca calendola* | Cape Weed |
| *Arundo donax* | Giant Cane |
| *Atriplex semibaccata* | Australian Saltbush |
| *Brassica species**** | Mustard |
| *Cardaria draba**** | Hoary Cress, Perennial Peppergrass |
| *Carpobrotus edulis* | Ice Plant |
| *Centaurea solstitialis* | Yellow Starthistle |
| *Cirsium vulgare**** | Wild Artichoke |
| *Conium maculatum* | Poison Hemlock |
| *Conyza Canadensis**** | Horseweed |
| *Cortaderia selloana* | Pampas Grass |
| *Cotoneaster lacteus* | Cotoneaster |
| *Cupressus macrocarpa* | Monterey Cypress |
| *Cynara cardunculus**** | Artichoke Thistle |
| *Cytisus species* | Scotch Broom, French Broom, etc |
| *Elaeagnus angustifolia* | Russian Olive |
| *Eucalyptus globulus* | Eucalyptus Blue Gum |
| *Gensita species**** | Broom |
| *Hedera helix* | English Ivy |
| *Hypericum perforatum* | St. John's Wort |
| *Ilex aquifolium* | English Holly |
| *Lactuca serriola**** | Prickly Lettuce |
| *Lepidium latifolium* | Perennial Pepperweed |
| Myoporum parvifolium | Trailing Myoporum |
| *Nerium oleander* | Oleander |
| *Nicotiana species* | Tree Tobacco |
| *Olea europaea* | Olive |
| *Pennisetum setaceum* | Fountain Grass |
| *Ricinus communis* | Castor Bean |
| *Robinia pseudoacacia* | Black Locust |
| *Salsola australis**** | Russian Thistle, Tumbleweed |
| *Schinus molle* | California Pepper |
| *Schinus terebinthifolius* | Brazilian Pepper |
| *Silybum marianum**** | Milk Thistle |
| *Spartium junceum* | Spanish Broom |

| | |
|---|---|
| *Tamarix species* | Tamarisk |
| *Ulex europea**** | Gorse |
| *Vinca major* | Periwinkle |

*** Introduced Weeds to San Diego County

**References**: Bell, Carl, Regional Advisor – Invasive Plants. 2004. University of California Cooperative Extension.

California Exotic Pest Plant Council. October, 1999. Exotic Pest Plants of Greatest Ecological Concern in California. Most Invasive Wildland Pest Plants. www.caleppc.org/info/99lista.html.

# SUGGESTED PLANT LIST FOR A DEFENSIBLE SPACE

| BOTANICAL NAME | COMMON NAME | Climate Zone |
|---|---|---|
| **TREES** | | |
| Acer | | |
| platanoides | Norway Maple | M |
| rubrum | Red Maple | M |
| saccharinum | Silver Maple | M |
| saccarum | Sugar Maple | M |
| macrophyllum | Big Leaf Maple | C/ (R) |
| Alnus rhombifolia | White Alder | C/I/M (R) |
| Arbutus | | |
| unedo | Strawberry Tree | All zones |
| Archontophoenix | | |
| cunninghamiana | King Palm | C |
| Arctostaphylos spp.** | Manzanita | C/I/D |
| Brahea | | |
| armata | Blue Hesper Palm | C/D |
| edulis | Guadalupe Palm | C/D |
| Ceratonia siliqua | Carob | C/I/D |
| Cerdidium floridum | Blue Palo Verde | D |
| Cercis occidentalis** | Western Redbud | C/I/M |
| Cornus | | |
| nuttallii | Mountain Dogwood | I/M |
| stolonifera | Redtwig Dogwood | I/M |
| Eriobotrya | | C/I/D |
| japonica | Loquat | C |
| Erythrina caffra | Kaffirboom Coral Tree | I/M |
| Gingko biloba "Fairmount" | Fairmount Maidenhair Tree | I/D/M |
| Gleditisia triacanthos | Honey Locust | |
| Juglans | | I |
| californica | California Walnut | C/I |
| hindsii | California Black Walnut | I/D/M |
| Lagerstroemia indica | Crape Myrtle | I |
| Ligustrum lucidum | Glossy Privet | C/I/M |
| Liquidambar styraciflua | Sweet Gum | I |
| Liriodendron tulipifera | Tulip Tree | |
| Lyonothamnus floribundus | | C |
| ssp. Asplenifolius | Fernleaf Catalina Ironwood | C/I/D |
| Melaleuca spp. | Melaleuca | C/I |
| Parkinsonia aculeate | Mexican Palo Verde | |
| Pistacia | Chinese Pistache | |
| chinensis | Pistachio Nut | C/I/D |

| | | |
|---|---|---|
| vera | Pistachio Nut | I |
| Pittosporum | | |
| phillyraeoides | Willow Pittosporum | C/I/D |
| viridiflorum | Cape Pittosporum | C/I |
| Platanus | | |
| acerifolia | London Plane Tree | All zones |
| racemosa** | California Sycamore | C/I/M |
| Populus | | |
| alba | White Poplar | D/M |
| fremontii** | Western Cottonwood | I |
| trichocarpa | Black Cottonwood | I/M |
| Prunus | | |
| xblireiana | Flowering Plum | M |
| caroliniana | Carolina Laurel Cherry | C |
| ilicifolia** | Hollyleaf Cherry | C |
| lyonii** | Catalina Cherry | C |
| serrulata 'Kwanzan' | Flowering Cherry | M |
| yedoensis 'Akebono' | Akebono Flowering Cherry | M |
| Quercus | | |
| agrifolia** | Coast Live Oak | C/I |
| engelmannii | Engelmann Oak | I |
| ** suber | Cork Oak | C/I/D |
| Rhus | | |
| lancea** | African Sumac | C/I/D |
| Salix spp.** | Willow | All zones (R) |
| Tristania conferta | Brisbane Box | C/I |
| Ulmus | | |
| parvifolia | Chinese Elm | I/D |
| pumila | Siberian Elm | C/M |
| Umbellularia californica** | California Bay Laurel | C/I |

**SHRUBS**

| | | |
|---|---|---|
| Agave | Century Plant | D |
| americana | Century Plant | D |
| deserti | Shawis Century Plant | D |
| shawi** | | |
| Amorpha fruticosa** | False Indigobush | I |
| Arbutus | | |
| menziesii** | Madrone | C/I |
| Arctostaphylos spp.** | Manzanita | C/I/D |
| Atriplex** | | |
| canescens | Hoary Saltbush | I |
| lentiformis | Quail Saltbush | D |
| Baccharis** | | |
| glutinosa | Mule Fat | C/I |
| pilularis | Coyote Bush | C/I/D |
| Carissa grandiflora | Natal Plum | C/I |
| Ceanothus spp.** | California Lilac | C/I/M |
| Cistus spp. | Rockrose | C/I/D |
| Cneoridium dumosum** | Bushrue | C |
| Comarostaphylis** | | |
| diversifolia | Summer Holly | C |
| Convolvulus cneorum | Bush Morning Glory | C/I/M |
| Dalea | | |
| orcuttii | Orcutt's Delea | D |
| spinosa** | Smoke Tree | I/D |
| Elaeagnus | | |
| pungens | Silverberry | C/I/M |
| Encelia** | | |
| californica | Coast Sunflower | C/I |
| farinose | White Brittlebush | D/I |
| Eriobotrya | | |
| deflexa | Bronze Loquat | C/I |
| Eriophyllum | | |
| confertiflorum** | Golden Yarrow | C/I |
| staechadifolium | Lizard Tail | C |
| Escallonia spp. | Escallonia | C/I |
| Feijoa sellowiana | Pineapple Guava | C/I/D |
| Fouqueria splendens | Ocotillo | D |
| Fremontodendron** | | |
| californicum | Flannelbush | I/M |
| mexicanum | Southern Flannelbush | I |
| Galvezia | | |
| juncea | Baja Bush-Snapdragon | C |
| speciosa | Island Bush-Snapdragon | C |
| Garrya | | |
| elliptica | Coast Silktassel | C/I |
| flavescens** | Ashy Silktassel | I/M |

| | | |
|---|---|---|
| Heteromeles arbutifolia** | Ashy Silktassel | I/M |
| Lantana spp. | Toyon | C/I/M |
| Lotus scoparius | Lantana | C/I/D |
| Mahonia spp. | Deerweed | C/I |
| | Barberry | C/I/M |
| Malacothamnus | | |
| clementinus | | |
| | San Clemente Island Bush Mallow | C |
| fasciculatus** | | |
| | Mesa Bushmallow | C/I |
| Melaleuca spp. | | |
| Mimulus spp.** | Melaleuca | C/I/D |
| Nolina | Monkeyflower | C/I (R) |
| parryi | | |
| parryi ssp. wolfii | Parry's Nolina | I |
| Photinia spp. | Wolf's Bear Grass | D |
| Pittosporum | Photinia | All Zones |
| crassifolium | | |
| rhombifolium | | CI/I |
| tobira 'Wheeleri' | Queensland Pittosporum | C/I |
| undulatum | Wheeler's Dwarf | C/I/D |
| viridiflorum | Victorian Box | C/I |
| Plumbago auriculata | Cape Pittosporum | C/I |
| Prunus | Cape Plumbago | C/I/D |
| caroliniana | | |
| ilicifolia** | Carolina Laurel Cherry | C |
| lyonii** | Hollyleaf Cherry | C |
| Puncia granatum | Catalina Cherry | C |
| Pyracantha spp. | Pomegranate | C/I/D |
| Quercus | Firethorn | All Zones |
| dumosa** | | |
| Rhamus | Scrub Oak | C/I |
| alaternus | | |
| californica** | Italian Blackthorn | C/I |
| Rhaphiolepis spp. | Coffeeberry | C/I/M |
| Rhus | Rhaphiolepis | C/I/D |
| integrifolia** | | |
| laurina | Lemonade Berry | C/I |
| lentii | Laurel Sumac | C/I |
| ovata** | Pink-Flowering Sumac | C/D |
| trilobata** | Sugarbush | I/M |
| Ribes | squawbush | I |
| viburnifolium | | |
| speciosum** | Evergreen Currant | C/I |
| Romneya coulteri | Fuschia-Flowering Gooseberry | C/I/D |
| Rosa | Matilija Poppy | I |
| californica** | | |
| minutifolia | | |

| | | |
|---|---|---|
| Salvia spp.** | California Wild Rose | C/I |
| Sambucus spp.** | Baja California Wild Rose | C/I |
| Symphoricarpos mollis** | Sage | All Zones |
| Syringa vulgaris | Elderberry | C/I/M |
| Tecomaria capensis | Creeping Snowberry | C/I |
| Teucrium fruticans | Lilac | M |
| Toxicodendron** | Cape Honeysuckle | C/I/D |
| diversilobum | Bush Germander | C/I |
| Verbena | | |
| lilacina | Poison Oak | I/M |
| Xylosma congestum | | |
| Yucca** | Lilac Verbena | C |
| schidigera | Shiny Xylosma | C/I |
| whipplei | | |
| | Mojave Yucca | D |
| | Foothill Yucca | I |

| GROUNDCOVERS | | |
|---|---|---|
| Achillea** | Yarrow | All Zones |
| Aptenia cordifolia | Apteria | C |
| Arctostaphylos spp.** | Manzanita | C/I/D |
| Baccharis** | | |
| pilularis | Coyote Bush | C/I/D |
| Ceanothus spp.** | California Lilac | C/I/M |
| Cerastium tomentosum | Snow-in-Summer | All Zones |
| Coprosma kirkii | Creeping Coprosma | C/I/D |
| Cotoneaster spp. | Redberry | All Zones |
| Drosanthemum hispidum | Rosea Ice Plant | C/I |
| Dudleya | | |
| brittonii | Brittonis Chalk Dudleya | C |
| pulverulenta** | Chalk Dudleya | C/I |
| virens | Island Live Fore-ever | C |
| Eschscholzia californica** | California Poppy | All Zones |
| Euonymus fortunei | | |
| 'Carrierei' | Glossy Winter Creeper | M |
| 'Coloratus' | Purple-Leaf Winter Creeper | M |
| Ferocactus viridescens** | Coast Barrel Cactus | C |
| Gaillardia grandiflora | Blanket Flower | All Zones |
| Gazania spp. | Gazania | C/I |
| Helianthemum spp.** | Sunrose | All Zones |
| Lantana spp. | Lantana | C/I/D |
| Lasthenia | | |
| californica** | Common Goldfields | I |
| glabrata | Coastal Goldfields | C |
| Lupinus spp.** | Lupine | C/I/M |
| Myoporum spp. | Myoporum | C/I |
| Pyracantha spp. | Firethorn | All zones |
| Rosmarinus officinalis | Rosemary | C/I/D |
| Santolina | | |
| chamaecyparissus | Lavender Cotton | All Zones |
| virens | Santolina | All Zones |
| Trifolium frageriferum | O'Connor's Legume | C/I |
| Verbena | | |
| rigida | Verbena | All Zones |
| Viguiera laciniata** | San Diego Sunflower | C/I |
| Vinca | | |
| minor | Dwarf Periwinkle | M |

| VINES | | |
|---|---|---|
| Antigonon leptopus | San Miguel Coral Vine | C/I |
| Distictis buccinatoria | Blood-Red Trumpet Vine | C/I/D |
| Keckiella cordifolia** | Heart-Leaved Penstemon | C/I |
| Lonicera | | |
| japonica 'Halliana' | Hall's Honeysuckle | All Zones |
| subspicata** | Chaparral Honeysuckle | C/I |
| Solanum | | |
| jasminoides | Potato Vine | C/I/D |

| PERENNIALS | | |
|---|---|---|
| Coreopsis | | |
| gigantean | Giant Coreopsis | C |
| grandiflora | Coreopsis | All Zones |
| maritime | Sea Dahlia | C |
| verticillata | Coreopsis | C/I |
| Heuchera maxima | Island Coral Bells | C/I |
| Iris douglasiana** | Douglas Iris | C/M |
| Iva hayesiana** | Poverty Weed | C/I |
| Kniphofia uvaria | Red-Hot Poker | C/M |
| Lavandula spp. | Lavender | All Zones |
| Limonium californicum | | |
| var. mexicanum | Coastal Statice | C |
| perezii | Sea Lavender | C/I |
| Oenothera spp. | Primrose | C/I/M |
| Penstemon spp.** | Penstemon | C/I/D |
| Satureja douglasii | Yerba Buena | C/I |
| Sisyrinchium | | |
| bellum | Blue-Eyed Grass | C/I |
| californicum | Golden-Eyed Grass | C |
| Solanum | | |
| xantii | Purple Nightshade | C/I |
| Zauschneria** | | |
| californica | California Fuschia | C/I |
| cana | Hoary California Fuschia | C/I |
| 'Catalina' | Catalina Fuschia | C/I |

| ANNUALS | | |
|---|---|---|
| Lupinus spp.** | Lupine | C/I/M |

## UNDESIRABLE PLANT LIST

The following species are highly flammable and should be avoided when planting within the first 50 feet adjacent to a structure. The plants listed below are more susceptible to burning, due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, large amounts of dead material in the plant, or plantings with a high dead to live fuel ratio. Many of these species, if existing on the property and adequately maintained (pruning, thinning, irrigation, litter removal, and weeding), may remain as long as the potential for spreading a fire has been reduced or eliminated.

| BOTANICAL NAME | COMMON NAME |
|---|---|
| Abies species | Fir Trees |
| *Acacia species* | Acacia (trees, shrubs, groundcovers) |
| *Adenostoma sparsifolium*** | Red Shanks |
| *Adenostoma fasciculatum*** | Chamise |
| *Agonis juniperina* | Juniper Myrtle |
| *Araucaria species* | Monkey Puzzle, Norfolk Island Pine |
| *Artemesia californica*** | California Sagebrush |
| *Bambusa species* | Bamboo |
| *Cedrus species* | Cedar |
| *Chamaecyparis species* | False Cypress |
| *Coprosma pumila* | Prostrate Coprosma |
| *Cryptomeria japonica* | Japanese Cryptomeria |
| *Cupressocyparis leylandii* | Leylandii Cypress |
| *Cupressus forbesii*** | Tecate Cypress |
| *Cupressus glabra* | Arizona Cypress |
| *Cupressus sempervirens* | Italian Cypress |
| *Dodonea viscosa* | Hopseed Bush |
| *Eriogonum fasciculatum*** | Common Buckwheat |
| *Eucalyptus species* | Eucalyptus |
| *Heterotheca grandiflora*** | Telegraph Plant |
| *Juniperus species* | Junipers |
| *Larix species* | Larch |
| *Lonicera japonica* | Japanese Honeysuckle |
| *Miscanthus species* | Eulalia Grass |
| *Muehlenbergia species*** | Deer Grass |
| *Palmae species* | Palms |
| *Picea species* | Spruce Trees |
| *Pickeringia Montana*** | Chaparral Pea |
| *Pinus species* | Pines |
| *Podocarpus species* | Fern Pine |
| *Pseudotsuga menziesii* | Douglas Fir |
| *Rosmarinus species* | Rosemary |
| *Salvia mellifera*** | Black Sage |
| *Taxodium species* | Cypress |
| *Taxus species* | Yew |
| *Thuja species* | Arborvitae |
| *Tsuga species* | Hemlock |
| *Urtica urens*** | Burning Nettle |

** San Diego County native species

**References**: Gordon, H. White, T.C. 1994. Ecological Guide to Southern California Chaparral Plant Series. Cleveland National Forest.

Willis, E. 1997. San Diego County Fire Chief's Association. Wildland/Urban Interface Development Standards

City of Oceanside, California. 1995. Vegetation Management. Landscape Development Manual. Community Services Department, Engineering Division.

City of Vista, California 1997. Undesirable Plants. Section 18.56.999. Landscaping Design, Development and Maintenance Standards.

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County of Los Angeles Fire Department. 1998. Fuel Modification Plan Guidelines. Appendix I, Undesirable Plant List, and Appendix II, Undesirable Plant List.

# APPENDIX "B"

## Literature Referenced in the Fire Protection Plan


1. *BEHAVE: Fire Behavior Prediction and Fuel Modeling System - BURN Subsystem, Part 1.* General Technical Report INT-194. January 1986. Patricia L. Andrews, United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.

2. *BEHAVE: Fire Behavior Prediction and Fuel Modeling System - BURN Subsystem, Part 2.* General Technical Report INT-260. May 1989. Patricia L. Andrews and Carolyn H. Chase, United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.

3. BehavePlus Modeling System 3.0.1 by Patricia L. Andrews and Collin D. Bevins, USDA–Forest Service, Rocky Mountain Research Station – Fire Sciences Lab, Missoula, Montana, and System for Environmental Managmement of Missoula, Montana. 2005.

4. California State Senate Bill 1369 – *Amends Section 51182 of the Government Code and Section 4291 of the Public Resource Code Relating to Fire Protection.*

5. *How to Predict the Spread and Intensity of Forest and Range Fires.* General Technical Report INT-143. June 1983. Richard C. Rothermel. United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.

6. National Fire Protection Association - NFPA 1144 *Standard for Protection of Life and Property from Wildfire* (2002).

7. County of San Diego Ordinance No. 9669 – *An Ordinance Repealing and Reenacting the County Fire Code.*

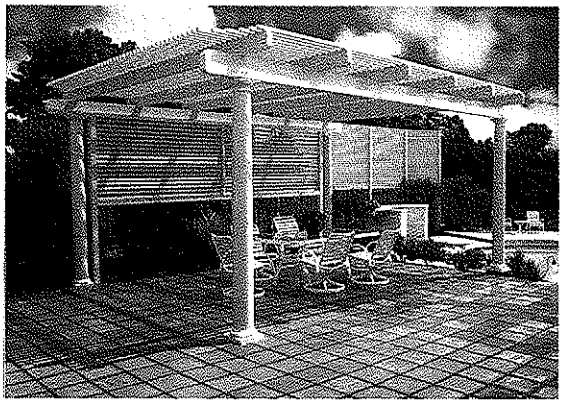
8. County of San Diego Ordinance No 9670 – *An Ordinance Amending the County Building Code to Adopt the 2001 California Building Code and to Add Certain Fire-Resistive Construction Standards.*

# Appendix C

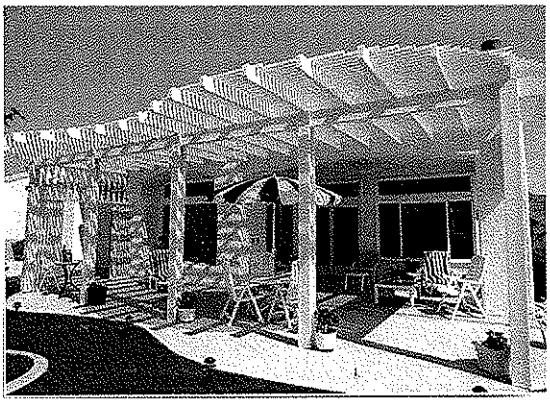
## Non-combustible & Fire Resistant Building Materials For balconies, Carports, Decks, Patio Covers and Floors

Examples of non-combustible & fire resistant building materials for balconies, carports decks, patio covers and floors are as follows:

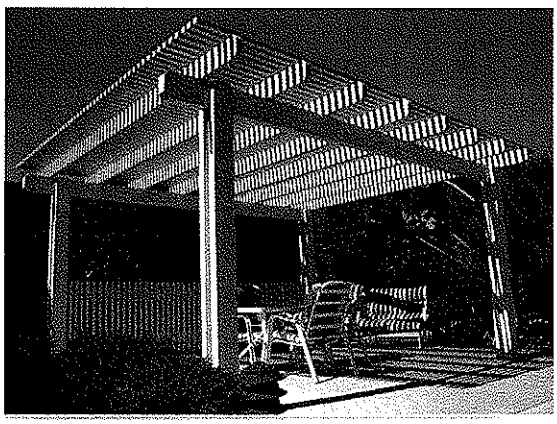
I. NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS - *Metals USA Building Products Group - Ultra-Lattice*



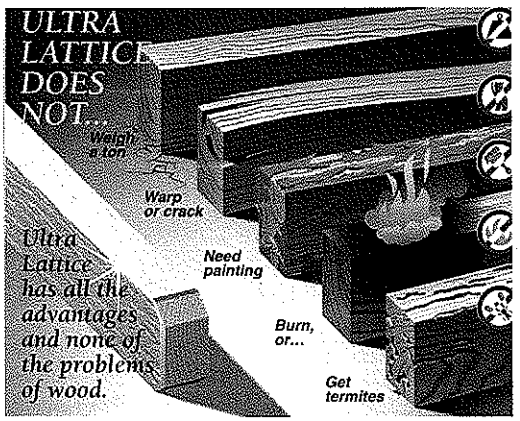
**Ultra-Lattice Stand Alone Patio Cover**



**Ultra-Lattice Attached Patio Cover**



**Ultra-Lattice Solid Patio Cover**




**Ultra-Lattice Vs. Wood**

## V. FRX Exterior Fire-Retardant Treated Wood

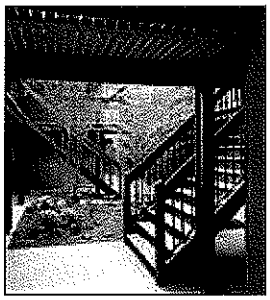
### Exterior Fire Retardant Treated (FRT) Wood

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. The International Building, Residential and Urban-Wildland Interface Codes and regulations, permit the use of fire retardant treated wood in specific instances. See below for typical exterior uses and typical residential uses.

***Typical Exterior Uses***

- Balconies
- Decks
- Stairways
- Fences
- Sheds
- Gazebos

Homeowners and Residential Architects: See this 2-minute video and the diagram below.



For information on fire retardant treated wood for exterior uses, visit www.frxwood.com.

# Appendix D
# BEHAVE Fire Prediction System

"Can wildland fire behavior really be predicted? That depends on how accurate you expect the answer to be. The minute-by-minute movement of a wildland fire will probably never be totally predictable–certainly not from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgement in assessing the fire environment, coupled with a systematic method of calculating fire behavior, yields suprisingly good results (Rothermel 1983)".

The BEHAVE Plus Fire Behavior Prediction and Fuel Modeling System was developed by USDA-Forest Serveice research scientists at the Intermountain Forest Fire Laboratory, Missoula, Montanaand is utilized by wildland fire experts nationwide (refer to APPENDIX 'C'). "Because the model was designed to predict the spread of a fire, the fire model describes the fire behavior only within the flaming front. The primary driving force in the fire behavior calculations is the dead fuel less than one-fourth inch in diameter; these are the fine fuels that carry the fire. Fuels larger than three (3") inches in diameter are not included in the calculations at all (Andrews 1986)".

The BEHAVE Plus fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet of the ground and contiguous to the ground.

Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVE modeling system to project the expected fire intensity, rate-of-spread and flame lengths with a reasonable degree of certainty for use in Fire Protection Planning purposes. The ***FIREWISE*** **2000, Inc.** evaluation team used the computer based BEHAVE Fire Behavior Prediction Model to make the following fire behavior assessments for the Pizzuto Subdivision Development.

# Appendix E
# Structure Ignition Assessment

"*Firewise*" landscaping is the act of converting native vegetation from a highly flammable and high intensity state to a more fire resistant and lower intensity condition. The comparisons of the untreated fuels in Tables 2.2.1 with Table 2.2.2 ("*Firewise*" Landscaping) demonstrates how "*Firewise*" landscaping substantially reduces flame lengths and fireline intensity to an acceptable level for home protection. Other than non-combustible roofing and exterior building materials, "*Firewise*" landscaping has proven to be the most effective treatment for minimizing structure losses due to wildfire radiant heat.

A USDA-Forest Service research study entitled the "Structure Ignition Assessment Model (SIAM)" by Jack D. Cohen, Intermountain Fire Science Laboratory, Missoula, Montana has helped to validate how much distance is required to keep structures from igniting due to wildland fire radiant heat. Preliminary SIAM results suggest that for reducing structure ignitions from radiant heat, vegetation modification beyond 100 feet distance from a structure has no significant benefit unless there is supporting data justifying more than 100 feet of vegetation modification. In this case, fuel modification measures up to 100 feet are more than adequate to protect the homes on lots adjacent to native vegetation.

The SIAM Ignition Study indications and the personal experience of the ***FIREWISE* 2000, Inc.** evaluation team helped establish the fuel modification recommendations found in Section 5.0: Fuel Modification Definition, Required Landscaping and Required Maintenance & Fuel Treatment Location Map.

# Appendix F

**Basic Fire-Resistive Construction Requirements:**

- All residential structures will be built with a Class A Roof Assembly, including a Class A roof covering, and attic or foundation ventilation louvers.
- Ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/4-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection.
- Attic ventilation shall also comply with the requirements of the San Diego Planning and Land Use (Building and Planning Division) and the Uniform Building Code (U.B.C.). Ventilation louvers and openings may be incorporated as part of access assemblies.
- Paper-faced insulation shall be prohibited in attics or ventilated spaces.
- All chimney, flue or stovepipe openings will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, 12 gauge minimum thickness or other material found satisfactory by the Fire Department, having ½-inch perforations for arresting burning carbon or sparks. It shall be installed to be visible for the purposes of inspection and maintenance.
- Structures will have automatic interior sprinklers installed according to the National Fire Protection Association (NFPA) 13D- *Standard for the Installation of Sprinkler Systems in One- and Two-family Homes and Manufactured Homes* and Deer Springs Fire Protection District standards.
- All glass or other transparent, translucent or opaque glazing materials including skylights, shall be constructed of tempered glass or multi-layered glazed panels. No skylights will be allowed on the roof assembly facing hazardous vegetation.
- The exterior walls surface materials shall be non-combustible or an approve alternate. In all construction, exterior walls are required to be protected with 2-inch nominal solid blocking between rafters at all roof overhangs.
- No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
- All eaves will conform to one of the two approved methods of construction. One method is for all eaves, facias and soffits to be completely enclosed (boxed) with non-combustible materials. The second approved method is the use of heavy timber (4"x 6") rafter tails. Which ever construction method is used, the entire structure perimeter shall comply.

**Enhanced Fire-Resistive Construction Requirements:**

In addition to the above basic requirements for all structures, the following Enhanced Fire-Resistive Construction Requirements are required for all residential structures on all lots as per the San Diego County Planning and Land Use, Building Division; the San Diego County Fire Code and the San Diego Consolitated Fire Code. The Enhanced Fire-Resistive Construction Requirements are as follows:

- All rain gutters, down spouts and gutter hardware shall be constructed from metal or other non-combustible material to prevent wildfire ignition along eave assemblies. Gutters shall be designed to reduce the accumulation of leaf litter and debris that contribute to roof edge ignition.
- All side yard fence and gate assemblies (fences, gate and gate posts) when attached to the home shall be of non-combustable material. The first five feet of fences and other items attached to a structure shall be of non-combustible material.
- No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
- All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) on all lots shall be of non-combustible construction, one-hour fire resistive construction on the underside, or heavy timber construction. When such appendages and projections are attached to exterior fire-resistive walls, they shall be constructed to maintain the fire-resistive integrity of the wall. Refer to Appendix "D" Non-combustible & Fire Resistant Building Materials For Balconies, Carports, Patio Covers and Floors.
- Exterior doors shall be approved non-combustible construction, solid core wood not less than 1 ¾ inches thick or have a fire protection rating of not less than 20 minutes.
- Vinyl window assemblies are deemed acceptable if the windows have the following characteristics:
    - Frame and sash are comprised of vinyl material with welded corners
    - Metal reinforcements in the interlock area
    - Glazed with insulating glass, annealed or tempered
    - Frame and sash profiles are certified in AAMA Lineal Certification Program Certified and labeled to ANSI/AAMA/NWWDA 101/I.S.2-97 for Structural Requirements.